

How to Grow Strong, Healthy Seedlings in 7 Steps

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Success stems from how you start.

Take education, for example. If a child struggles to understand basic concepts and lessons in kindergarten, but the teacher allows him to pass and go on to first grade, he'll very likely struggle there, too — and in third, and in fourth, and so on.

And it's because he's building on a poor foundation, a bad beginning.

That's an analogy I recently heard Tower Garden Chief Technology Officer Tim Blank use in reference to seedlings. And it makes a lot of sense.

After all, the quality and health of the seedlings you use to start your garden determines how successful that garden will be overall.

If you use weak seedlings, you'll probably end up with slow-growing, unproductive plants that invite pests and other problems.

But robust seedlings, on the other hand, significantly improve your odds of growing a healthy garden that yields an abundance of food.

So, in this post, you'll learn seven techniques that professional growers use to cultivate hearty seedlings that become fruitful plants. And I'm serious about the "professional growers" part. Bret Bowlin of ATL Urban Farms helped me craft this guide. (Thanks, Bret!)



3 Benefits of Starting from Seed

Why would you grow your own seedlings rather than buy them from a professional grower? There are a few advantages:

You save money. A single seedling will typically cost you about the same amount as a full packet of seeds. So for a couple of dollars, you could either get one plant or — if you choose seeds — potentially dozens.

You have more options. Seedling providers offer an array of plants. But you'll find that thousands of varieties — and often the most interesting ones, such as this Dark Galaxy Heirloom tomato — come only in seed form.

You control seedling quality. Want to make sure your seedlings don't come with chemical residue or pests? Starting from seed gives you the greatest amount of control over your seedlings' quality.

Bonus benefit: If you're gardening with kids, starting from seed serves as a fun, educational experience. What better way to learn about a plant's life cycle than to watch it from the very beginning?

7 Steps of Growing Spectacular Seedlings

With so many advantages, you may be wondering, "Why doesn't everyone start from seed?" Well, frankly, it's slower and a little more challenging. But with this guide, I aim to make it less so!

Let's dig in.

1. Decide the best time to plant your seeds.

As with most gardening activities, seedling success has a lot to do with timing. Start your plants too early, and an unexpected frost might kill them. Start them too late, and they may not have enough time to mature.

Fortunately, seeds often come with planting schedules stamped on their packet (see the picture above for an example). But if yours don't, there are also planting calendars you can reference, such as this one based on your location.

2. Gather all the supplies you'll need.

Cultivating healthy seedlings requires only a few things. First and foremost, you'll need the seeds, of course.

You can order high-quality seeds online or from seed catalogs. But local garden shops and seed swaps are also great sources. (A key benefit of buying online is that you can often see product reviews from other gardeners, which may give you an idea of what to expect.)

Wherever you get them, you'll want to use relatively fresh seeds. After a year or two, most seeds don't germinate as well, especially if they haven't been stored in a cool, dark place.

Besides seeds, it's helpful to have:

- A seedling tray (a food storage container or glass baking dish will also do)
- A propagation dome (or plastic wrap)
- Rockwool cubes and vermiculite
- Grow lights (fluorescent shop lights are an inexpensive, but effective option)
- A small fan
- An outlet timer



Tower Tip: The Tower Garden Seedling Starter Kit comes with a seedling tray and dome, plus rockwool cubes, vermiculite, and seeds.

If you've used any of your seed starting supplies before, make sure to clean everything well. You don't want to expose your seedlings to disease before you even transplant!

3. Plant your seeds.

Many gardeners, myself included, find that soaking seeds overnight in a shallow bowl of water improves and speeds germination rates. And this seems to work for most plants. (That being said, I wouldn't worry about soaking smaller seeds, such as those for lettuce and greens — they're too easy to lose, and they usually sprout well anyway.)

Before you plant your seeds, thoroughly soak your rockwool cubes for half an hour or so. Then plant the appropriate number of seeds based on crop type:

- For lettuces and greens, plant 6–12 seeds per cube.
- For herbs, plant up to 6 seeds per cube.
- For vegetables with larger seeds (e.g., tomatoes, cucumbers, peppers, beans), plant 1–2 seeds per cube.
- For other types of seeds, refer to the instructions on the seed packet.

Once you've planted the seeds, fill each rockwool cube seed hole with dry, coarse-grade vermiculite. (For smaller seeds, fill the hole only half-full.) This will ensure seeds have enough moisture to germinate.

Tower Tip: Not all seeds must be sprouted before being transplanted. Some you can seed directly into your Tower Garden. These include plants that grow very quickly after germinating, such as beans, cucumber, and squash.

4. Provide the ideal conditions for germination.

Once you've planted your seeds, it's time to make them comfortable.

Before your seeds sprout, temperature is a critical factor. Most leafy greens and herbs will germinate well in the 55–75°F range. But fruiting crops usually prefer the upper end of that range. If your propagation area is cooler than that, a heating mat may help.

Also consider covering your seedling tray with the dome or plastic wrap until the seeds sprout. This helps create a warm, humid microclimate.

Following successful germination, you'll want to turn off the heating mat and remove the dome or plastic wrap. Too much humidity for too long can breed fungal pathogens. And we don't want that.



5. Keep your seedlings healthy.

It probably goes without saying that your plants need water. But how much? How often?

Essentially, you want your rockwool cubes to stay moist but not oversaturated. Adding about a quarter inch of fresh water (replacing any existing water) to the seedling tray daily should do the trick.

As soon as you see something green peeking out of your seeds, you should give them lots of light. And keep in mind, despite what you might have heard, light from a window — even a big, southern-facing one — likely won't be enough, especially in the winter.

If it's too cold to move your plants outside in the sun, placing T5 or T8 fluorescent bulbs just inches away from your young plants will work well. Seedlings will typically grow best with 14–16 hours of daily grow light exposure. (This is where an outlet timer comes in handy.)

Seeds contain all the nutrients they need for their first few weeks. But after they run out their reserves, they'll need to be fed. So once you see true leaves — the leaves that come after the first pair of cotyledon leaves that were formed inside the seed — you can start adding a capful of Mineral Blend A and Mineral Blend B every other day to supplement your plants' diet.

6. Make your seedlings strong.

To get your seedlings ready for the great outdoors (assuming you're not planning to keep them inside), you need to toughen them up a little.

How? Routinely "pet" your new seedlings and/or set a fan to gently blow on them. This will make your plants stockier, which will help them better resist real wind and other outdoor elements. It also promotes air circulation around your plants, preventing plant diseases.

By the time your seedlings have a few pairs of leaves, weeding out the competition — that is to say, thinning some of your seedlings with a sharp pair of shears to leave only one plant per rockwool cube — can be wise.

The plants that benefit from thinning typically fall into the heartier, fruiting crop category (e.g., tomatoes, squash, peppers). For most herbs and greens, on the other hand, you can usually grow multiples per rockwool cube.

7. Transplant!

When your seedlings are about three inches tall and have roots protruding from the bottom of the rockwool cubes, it's time to transplant.

But about a week before you do, you should harden off your seedlings. The process is fairly simple — just expose your seedlings to the outdoors in increments of a few hours every day for a week. (This, of course, assumes your plants aren't outside already.) So one or two hours the first day, three or four hours the second day, and so on for about seven days.

Tower Tip: Hardening off prevents shock, which can delay your plants' development.

Finally, plug your new, happy, hardened seedlings into your Tower Garden and watch their growth explode!

Common Seedling Problems (and Solutions)

You should be closely monitoring your seedlings for signs that something is wrong from the time that you plant the seeds.

Here are a few common problems to watch for:

- Seeds won't sprout. How old are your seeds? (The fresher, the better.) Keep in mind that certain seeds may take up to two weeks to sprout. Also, see step four to verify you've created the ideal sprouting conditions.
- Seedlings grow tall and thin. Leggy growth likely means your plants aren't getting enough light. Confirm that they're either under grow lights for 14–16 hours per day or outside in the direct sun for 6–8 hours daily.
- Slow growth and/or pale yellow leaves. Have you been feeding your seedlings? This could be a symptom of inadequate nutrition.

If you notice anything else unusual, leave a comment below, and I'll do my best to help.

Over to You

Remember, seeds sprout and grow into healthy plants by nature's design. So if you follow the steps above, you'll just be giving them a little support to ensure they (and you) are successful.

Happy growing!